

PRELIMINARY NOTE ON THE FINDING OF *HYPODERMA BOVIS* AT AGASSIZ, B. C., TOGETHER WITH NOTES ON THE BIOLOGY OF THE FLY.

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The species of Warble-fly recorded here for the first time in Canada, and probably for North America, is *Hypoderma bovis* (DeGeer).

Up to the present time, *Hypoderma lineata* has been considered to be the Warble-fly of North America. During the past summer (1912) six specimens of *H. bovis* were captured attacking cattle, and seven flies were bred from pupae. The average time taken for the emergence of flies from the pupa was 34.7 days.

EXPERIMENTS ON OVIPOSITION.

Experiments were made with flies which had their wings clipped, but, though eggs were extruded, the usual mode of oviposition was not ascertained. On tying cattle up securely, and allowing flies to oviposit on them, it was found that the eggs are laid on the legs, and that none were discovered above the stifle on the hind legs, or above the elbow on the fore limbs. It was proved that the eggs are attached to the base of the hairs, and that they are laid singly. The egg comes out of the ovipositor with the grooved end first, the groove being fitted on to a hair, and adhering to it with a gummy substance. Eggs laid by flies in captivity (in vials) were not found to be sticky, so that the assumption is that the gummy substance is enclosed within the groove. Egg-laying was witnessed a number of times, and the conclusion was reached that the terror which inspires cattle to stampede, or "gad," is caused by the persistent attack of the insect. When *Tabanidae*, for instance, annoy a cow, she flicks them off with her tongue or tail, and they leave for a moment, but Warble-flies seem indifferent to the kicks or stamps of an animal, and when cattle lose their heads and run, the fly still follows, inspiring them with terror, and the result is a stampede.

That the fear of Warble-flies is contagious among cattle, was proved by the fact that stabled animals, seeing others stampeding through the windows, endeavored to break away.

LARVAE.

Larvae under 5mm. in length were secured from the gullets of cattle as early as August 15th. All the full grown larvae collected at

Agassiz proved to be those of *H. bovis*, but two larvae of *H. lineata* were secured at Mount Lehman, B. C.

Most of the cattle from which the larvae were obtained came from Ontario the previous autumn, so that *H. bovis* should be found there also.

I am indebted to Dr. F. Torrance, Veterinary Director General, for permission to publish this note. A full account of the experiments conducted at Agassiz is being published by the Department, also an article on the "Economic Aspect of Warble-flies in Canada."

FINANCIAL STATEMENT.

January 31st, 1913.

Deficit from 1912.....	\$ 4.50	
Printing of 1912 Report.....	115.00	
Postage 1912	5.25	
Stationery60	
Printing programme	9.25	
Postage 1913	3.50	
Subscription to "Canadian Entomologist" at 50 cents per member	34.50	
Engraving Map of B. C.....	3.20	
500 Copies of Map Printed.....	2.25	
Print of Photo Group (1913) from "Colonist".....	.75	
Copper Plate of Group for Report.....	7.20	
Private Subscription received toward 1912 Report.....		\$ 60.00
Membership Subscription received 1913-1914 at \$1.00 per member		70.00
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	\$186.00	\$130.00
Deficit	56.00	